Neptune Oceanographics Ltd

Differential Temperature Sensors

Under some circumstances such as with water injection flow lines, leaks can be identified using the temperature difference between the surrounding seawater and the water leaking from the flowline. The flowline water temperature is normally above ambient seawater temperature due to the high pressure pumping required. Neptune has developed a differential temperature technique that can detect very small temperature changes. The sensors comprise fast, high precision thermistors connected through the Neptune leak detection system to the ROV umbilical for onboard display and recording.

The temperature probes are design for use with the 2 channel leak detection system and can be used simultaneously with a fluorometer or acoustic sensor connected to the second channel. Data are displayed graphically and recorded on the onboard PC

The probes use the loggers gain control line to switch between two modes

1. Direct temperature

2. Temperature gradient

Direct Temperature

In the direct mode the sensor will output the temperature at the probe in degrees Celsius. The valid temperature range is between -2ºC and 50ºC.

Screen shot of the sensor operating in Direct mode when a temperature change is applied.
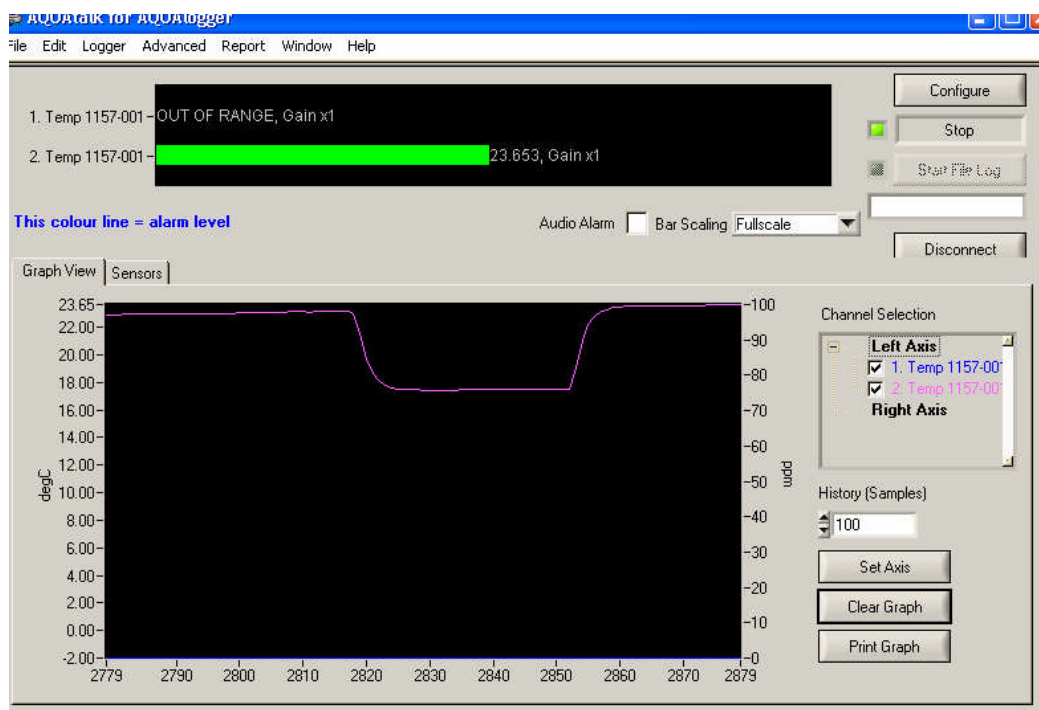
Temperature Gradient

The temperature gradient mode detects changes in temperature, therefore a rapid change of temperature will show up as either a positive or negative peak in the data. The rate of change has been set to show an approximate read out in degrees Celsius per second.

Screen shot of the sensor operating in gradient mode when the same temperature change is applied.
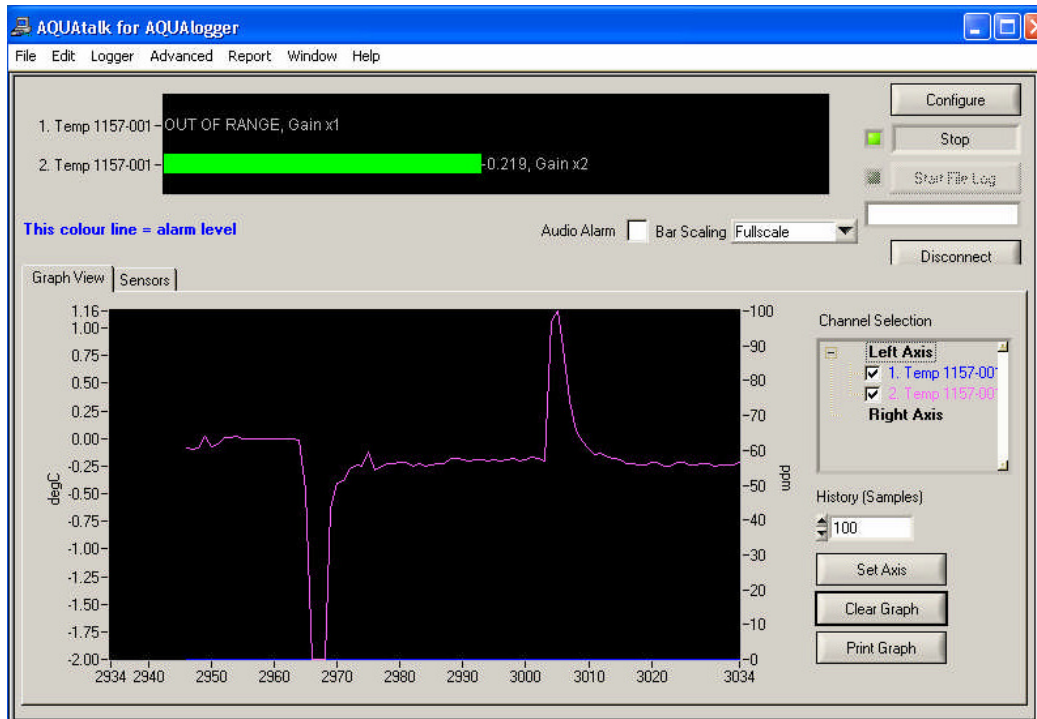
Specification

Operating depth 2000m

Calibrated temperature range -2ºC to 50ºC

Accuracy ±1ºC

Temperature Gradient range ±2deg/second

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ERROR: syntaxerror
OFFENDING COMMAND: --nostringval--

STACK:

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